## REMARKS/ARGUMENTS

Favorable reconsideration of the present application is respectfully requested.

The claims have been amended to recite that the step of leveling the surface of the newly formed removable hearth is performed at a location upstream of a first position where the mixture including the iron oxide to be reduced is fed onto the moving hearth, and between a third position upstream of the first position where the hearth material is fed, and the first position. Basis for this is found on in the paragraph bridging pages 21-22. The claims have also been amended to define the position where the metallic iron is discharged as a second position downstream of said first position in the direction of movement of the moving hearth. For example, referring to the non-limiting embodiment of Figure 2, the "first position" is exemplified by that where the mixture including a carbonaceous reducing agent and iron oxide is fed onto the moving hearth of the moving hearth reducing furnace by the raw agglomerate feeding means 4. The "second position" is exemplified by the discharge device 6 downstream of the raw agglomerate feeding means 4. The "third position" upstream of the first position of the raw agglomerate feeding means 4 is exemplified by the position of the hearth material feeding means 5, and the step of leveling the surface of the newly formed hearth is performed by the exemplary hearth leveling means 12 at a location between the third position of the hearth material feeding means 5 and the first position of the raw agglomerate feeding means 4.

The invention is directed to a problem that a renewable hearth can be degraded by the infiltration of the slag and molten iron (Fig. 5; page 16, beginning at line 9). The removal of these infiltrated elements from the renewable hearth by the discharge device 6, or damage to the discharge device, can create recesses in the remainder of the renewable hearth (page 18, lines 1-25). Also, infiltrated slag and molten iron which is not removed can create convex portions in the remainder of the renewable hearth. These convex portions and recesses will

remain after the hearth is renewed by the hearth material feeding means 5 (Figs. 6-8). By leveling the surface of the renewable hearth, for example using the leveling device 12, the convex portions and recesses in the remainder of the renewable hearth are smoothed before the raw agglomerate is fed by means 4.

It is respectfully submitted that the amended claims define over the prior art and do not comprise double patenting.

For example, Claims 1-4 and 7-21 were rejected based upon obviousness-type double patenting with respect to Claims 1, 3, 5 and 9-16 of copending application 10/842,403, published as U.S. patent publication 2004/0173054 (Tsuge et al). Claims 1-7 and 9-22 were also rejected under 35 U.S.C. § 102 as being anticipated by this reference.

Tsuge et al is directed to a method of manufacturing metallic iron wherein a renewable hearth is applied to a rotary hearth furnace by a hearth material supply apparatus 5 positioned upstream of the raw material agglomerate charging means 4. However, there is no disclosure in this reference of a step of leveling the hearth at a location between a (third) position 5 where the hearth material is fed and a (first) position 4 where the raw material to be heated and reduced is fed.

Applicants recognize that Claim 5 of Tsuge et al describes that a thickness of the renewable hearth is adjusted. Applicants also recognize that paragraph [0034] describes that the hearth material can be adjusted to a uniform thickness by using the discharging device 6 or "a separate leveling device." However, the discharge device 6 is at the "second" or discharge position which is *downstream* of the "first position" of the raw material charging means 4; it is not at a location between the "third position" and the "first position" and upstream of the first position. Moreover, while paragraph [0034] of Tsuge et al suggests the possibility of using a separate leveling device, it does not teach that any such separate leveling device should be at a position different from that of the discharge device, particularly

at a location upstream of the raw material charging means 4 and between the raw material charging means 4 and the hearth material supply apparatus 5. Accordingly, Tsuge et al neither claims nor teaches the location of the step of leveling the new surface of the hearth at the location which is presently recited in the claims.

Concerning the rejection of Claim 8 under 35 U.S.C. § 103 as being obvious over Tsuge et al, it is respectfully submitted that Claim 8 is not obvious because it depends from Claim 3 which now recites the aforementioned location of the step of leveling the new surface of the hearth. Additionally, both the present application and Tsuge et al were owned by the same entity at the time that the present invention was made. Tsuge et al is therefore prior art under 35 U.S.C. § 103(c) only as of its September 9, 2004 publication date, which is subsequent to the January 16, 2004 PCT filing date of the present application. Accordingly, Tsuge et al is not prior art against the claims under 35 U.S.C. § 103.

Claims 1-4, 7 and 9-14 were also rejected under 35 U.S.C. § 103 as being obvious over U.S. patent 6,648,942 (Hoffman et al), and based upon obviousness-type double patenting with respect to Claims 15, 16, 18, 19, 26 and 28 of Hoffman et al. The Office Action there particularly relied upon the smoothing device 24 of Hoffman et al, and the recitation thereof in Claim 28 of Hoffman et al, to teach a step of leveling the surface of the newly formed hearth.

However, both the present application and Hoffman et al were owned by the same entity at the time that the present invention was made. Hoffman et al is therefore prior art under 35 U.S.C. § 103(c) only as of its May 29, 2003 publication date, which is subsequent to the January 16, 2003 filing date of the provisional present application for which the present application claims priority. Accordingly, Hoffman et al is not prior art against the claims under 35 U.S.C. § 103. As for Claim 28 of Hoffman et al, it is noted that this claim does not recite the presently claimed upstream location for the leveling step.

Concerning the rejection of Claims 1-22 under 35 U.S.C. § 103 as being obvious over WO 99/20801, it is noted that there is no teaching in this reference for leveling a surface of a renewed hearth upstream of the position where the mixture to be reduced is fed. Instead, the Office Action relies on the description of the pressing step, presumably by use of the pressing elements 8. However, it is evident from Figure 7 that the pressing elements 8 are located downstream of the position of feeding the material to be reduced. The amended claims therefore define over this reference.

Concerning the rejection of Claims 1-22 as being rendered obvious by WO 00/29628, the Office Action here relied upon the description of the discharge conveyor 50 (page 13, lines 5-13) for leveling the material surface. However, as is evident from Figure 1, the discharge conveyor 50 is located downstream of the position of feeding the material to be reduced. It is further noted that the leveler 29 is also located downstream of the raw material conveyer. Accordingly, WO '628 also fails to teach the presently claimed location for the leveling step.

Finally, Claims 1-22 were also rejected under 35 U.S.C. § 103, or due to obviousness-type double patenting, based upon any one of Kikuchi '649, Kikuchi et al '462, Meissner et al, Ito et al, Hoffman et al '664, Fuji et al, Negami et al '744, Negami et al '231 or Tsuge et al, any one of these references taken in view of the leveling by the discharge mechanism 50 in WO '628. However, as already explained, the discharge mechanism 50 and leveler 29 in WO '628 are not provided at the upstream location now recited in the claims, and so the amended claims define over any combination of the above references and do not recite subject matter which would have been obvious from the claims of these references.

Applicants therefore believe that the present application is in a condition for allowance and respectfully solicit an early Notice of Allowability.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

Robert T. Pous
Attorney of Record
Registration No. 29,099

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 03/06)

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